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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,186	11/05/2003	Heliang Liu	9896-000014	7525
27572	7590	06/05/2006	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			SILLS, THOMAS R	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	
			2613	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/702,186

Applicant(s)

LIU ET AL.

Examiner

Thomas Sills

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-9 is/are rejected.
- 7) ☒ Claim(s) 3 and 10-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see pages 6-8, filed March 14, 2006, with respect to the rejection(s) of claim(s) 1, 2, 6, and 9 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art.

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 6, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (6,577,424 B1).

Regarding claim 1, Lin discloses an on-line dispersion compensation device for a wavelength division optical transmission system, comprising: two optical path selectors (circulators 305 and 307, fig. 3); at least one chirped grating fiber unit (fiber gratings 306, 308, 314, and 316, fig. 3); wherein the chirped grating fiber unit is serially connected between the appropriate ports of the two optical path selectors (between ports 5 and 7 in fig. 3); the input port of one optical path selector is connected with input optical signal of the device (wavelengths 1-16 are received by input port 4, fig. 3), and the last stage output port of one optical path selector is connected with the input port of another optical path selector (port 6 of circulator 305 is connected with port 8 or

circulator 307), the last stage output port of another optical path selector outputs the optical signal output of the device (port 9 of circulator 307 outputs wavelengths 1-16, fig. 3); and the chirped grating fiber unit further is consisted of two connected chirped grating fibers with same wavelength band and set oppositely (gratings 306, 308 are connected to 314, 316, as shown in fig. 3 and are set oppositely by the fact that gratings 306 and 308 reflect light output from port 5 while gratings 314 and 316 reflect light output from port 7, where both gratings reflect in the same wavelength band of wavelengths 1 and 2, col. 5, lines 7-26).

Regarding claim 2, Lin teaches that the optical path selector is a circulator (305 and 307, fig. 3), and one chirped grating fiber unit is serially connected between the two circulators (gratings 306, 308, 314, and 316 are serially connected between 305 and 307, fig.3); wherein two ports of the chirped grating fiber unit is respectively connected with the second port of the two circulators (ports 5 and 7, fig. 3), the first port of the first circulator is inputted the optical signal input of the device (port 4, fig. 3), the third port of the first circulator is connected with the first port of the second circulator (port 6 of 305 is connected to port 8 of 307, fig. 3), and the third port of the second circulator outputs the optical signal output of the device (port 9 of 307, fig. 3).

Regarding claims 6 and 9, Lin discloses that the bandwidth of the chirped grating fiber unit is multiple wavelengths (wavelengths 1 and 2, col. 5, lines 7-26).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Laming et al. (6,292,601 B1).

Regarding claims 4 and 7, Lin teaches all aspects of the invention, but does not teach that the gratings are written on a fiber segment.

Laming discloses writing a chirped fiber grating on a fiber for optical dispersion compensation (col. 3, lines 36-58). One skilled in the art at the time of the invention would have been motivated to include in Lin the method of writing of Laming in order to implement the fiber gratings in the fiber of Lin.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Lin the writing method of Laming.

5. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Epworth (6,271,952 B1).

With respect to claims 5 and 8, Lin teaches all aspects of the invention, but does not teach that two chirped grating fibers melted together.

Epworth teaches two grating fibers melted together (col. 9, lines 17-21). One skilled in the art at the time of the invention would have been motivated to include in Lin the method of melting in Epworth in order to connect the two oppositely set fiber gratings of Lin.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Lin the melting method of Epworth.

### ***Allowable Subject Matter***

6. Claims 3 and 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bhatia et al. (6,552,834 B2) discloses an optical add/drop system with circulators and fiber gratings (fig. 4).

Examiner notifies applicant that due to changes in the art units of the U.S. Patent and Trademark Office, the examiner's art unit has changed from 2633 to **2613**.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Sills whose telephone number is 571-272-2813. The examiner can normally be reached on 8-5 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

J.D.  
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KENNETH VANDERPUYE  
SUPERVISORY PATENT EXAMINER

2/1/00  
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